

REMARKS

This is intended as a full and complete response to the Final Office Action dated February 9, 2007, having a shortened statutory period for response set to expire on May 9, 2007. Applicants submit this response to place the application in condition for allowance or in better form for appeal.

After entry of this response, claims 1, 3, 6, 8, 9, and 11 remain pending in the application and are shown above. Claims 1, 3, 6, 8, 9, 11-14, 16, 17, 19, and 20 stand rejected by the Examiner. Claims 2, 4, 5, 7, 10, and 12-20 have been canceled. Claims 1 and 8 have been amended to clarify the invention, and claim 3 has been amended to depend on a pending claim. Applicants submit that the claim amendments do not introduce new matter. Reconsideration of the rejected claims is requested for reasons presented below.

Claim Rejections - 35 U.S.C. § 102

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by *Beasley*. Applicants respectfully traverse this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Further, the elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Beasley teaches a "method and an apparatus...for making an evanescent wave coupler" wherein "two optical waveguides are placed in juxtaposition with an interleaved film between them...to have reliable evanescent coupling therebetween" (Abstract). The embodiments teach (and the single claim of *Beasley* requires) **two** optical waveguides having evanescent coupling therebetween (Figs. 4 and 5). Thus, *Beasley* does not teach, show, or suggest an "optical sensor for sensing a measurand,

comprising: an optical waveguide having an outer cladding and at least one inner core disposed therein which propagates light; a D-shaped portion of the optical waveguide having a generally D-shaped cross-section, wherein a property of the D-shaped portion changes in response to the measurand, the property being polarization or birefringence; and a layer disposed on a flat surface of the D-shaped portion, wherein a refractive index of the layer changes in response to a change in the measurand” as recited in claim 1.

Furthermore, the Examiner contends in his Response to Arguments on page 2 of the current Office Action (*i.e.*, the Office Action dated February 9, 2007) that *Beasley* teaches “a property of the D-shaped portion changes in response to the measurand” as recited in claim 1, but points to changes in the evanescent wave coupling (col. 2 lines 8-15 and col. 4 lines 3-16). Evanescent wave coupling may be defined as the “coupling of optical energy from one fiber core to the other” (col. 1 lines 21-22), and thus requires two optical waveguides. Moreover, Applicants respectfully submit that a change in the amount of evanescent wave coupling is not equivalent to a change in polarization or birefringence. Hence, *Beasley* does not teach, show, or suggest “a property of the D-shaped portion changes in response to the measurand, the property being polarization or birefringence” as recited in amended independent claim 1.

Therefore, *Beasley* does not anticipate or suggest claim 1. Accordingly, Applicants submit that independent claim 1, as well as those claims that depend therefrom, are allowable and respectfully request withdrawal of this rejection.

Claim Rejections - 35 U.S.C. § 103

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Hartman*. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Bailey*. Applicants submit that claims 3 and 6, in view of the allowable independent claim 1, are allowable and respectfully request withdrawal of these rejections.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Hartman*. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Hartman* as applied to claim 8 above, and further in view of *Bergh* (U.S. Pat. No. 4,386,822). Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Hartman* as applied to claim 8 above, and further in view of *Bailey*. Applicants respectfully traverse these rejections.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2142. To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP § 2143.

The combination of *Beasley* in view of *Hartman* fails to meet at least the third criterion. For example, *Beasley* in view of *Hartman* does not teach, show, or suggest “a first D-shaped waveguide having a generally D-shaped cross-section” and “a second D-shaped waveguide having a generally D-shaped cross-section, wherein the first and second D-shaped waveguides are optically coupled together and wherein a property of at least one of the first and second D-shaped waveguides changes in response to the measurand, the property being one of polarization or birefringence” as recited in amended independent claim 8. As conceded by the Examiner on page 7 of the current Office Action, “*Beasley* does not teach that the strain [or any other measurand] applied to the sensor changes a polarization of the light.” *Beasley* is also silent regarding a change in birefringence. *Hartman* fails to overcome the limitations of *Beasley*.

Accordingly, Applicants submit that independent claim 8, as well as those claims that depend therefrom, are allowable and respectfully request withdrawal of these rejections.

Claims 12, 13, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Rowe*. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Rowe* as applied to claim 13 above, and further in view of *Hartman*. Claims 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Beasley* in view of *Rowe* as applied to claims 12 and 19, respectively, above, and further in view of *Bailey*. Claims 12-20 have been canceled, thereby obviating these rejections. Thus, Applicants respectfully request withdrawal of these rejections.

Conclusion

The references cited by the Examiner, alone or in combination, do not teach, show or suggest the invention as claimed. Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 C.F.R. 1.4,

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